

Pending Claims

The following Listing of Claims replaces all prior versions, and listings, of claims in the application.

Listing of Claims:

Claim 1 (previously presented): A system for managing a plurality of distributed nodes of a network, comprising:

a network management module that launches migratory recovery modules into the network to monitor status of each of the network nodes;

wherein each of the recovery modules is configured to migrate from one network node to another, determine a respective status of each of the network nodes to which it has migrated, and initiate a recovery process on ones of the network nodes having one or more failed node processes, the recovery modules determine the status of each of the network nodes, and the network management module monitors transmissions that are received from the recovery modules to provide periodic monitoring of the status of each of the network nodes.

Claim 2 (previously presented): The system of claim 1, wherein at least one of the recovery modules comprises a respective routing component for determining next hop addresses for migrating the recovery module from an origin network node to a series of successive destination network nodes.

Claim 3 (previously presented): The system of claim 2, wherein the routing component is configured to determine the next hop addresses based upon a routing table stored at the origin network node.

Claim 4 (previously presented): The system of claim 1, wherein at least one of the recovery modules is configured to determine the status of a network node by sending an inter-process communication to a node process.

Claim 5 (previously presented): A system for managing a plurality of distributed nodes of a network, comprising:

a recovery module configured to migrate from one network node to another, determine a status of a network node, and initiate a recovery process on a network node having one or more failed node processes, wherein the recovery module is configured to determine the status of a network node in accordance with a heartbeat messaging protocol.

Claim 6 (previously presented): The system of claim 1, wherein each of the recovery modules is configured to initiate a recovery process on a network node having one or more failed node processes in accordance with a restart protocol.

Claim 7 (previously presented): The system of claim 6, wherein each of the recovery modules is configured to initiate a restart of a failed node process by transmitting a request to a process execution service operating on the failed network node.

Claim 8 (previously presented): The system of claim 1, wherein each of the recovery modules is configured to transmit a respective node status message to the network management module.

Claim 9 (previously presented): The system of claim 8, wherein each of the node status messages comprises information obtained from a respective log file generated at a respective one of the network nodes having one or more failed node processes.

Claim 10 (canceled)

Claim 11 (previously presented): A method for managing a plurality of distributed nodes of a network, comprising:

(a) on a current one of the network nodes, determining a status of the current network node;

(b) in response to a determination that the current network node has one or more failed node processes, initiating a recovery process on the current network node;

(c) after initiating the recovery process, migrating from the current network node to a successive one of the network nodes; and

(d) repeating (a), (b), and (c) with the current network node corresponding to the successive network node for each of the nodes in the network.

Claim 12 (original): The method of claim 11, wherein migrating from one network node to another comprises determining a next hop address from an origin network node to a destination network node.

Claim 13 (original): The method of claim 12, wherein the next hop address is determined based upon a routing table stored at the origin network node.

Claim 14 (original): The method of claim 11, wherein the status of a network node is determined by sending an inter-process communication to a node process.

Claim 15 (original): The method of claim 11, wherein the status of a network node is determined in accordance with a heartbeat messaging protocol.

Claim 16 (previously presented): The method of claim 11, wherein a recovery process is initiated on a network node having one or more failed node processes in accordance with a restart protocol.

Claim 17 (original): The method of claim 16, wherein a restart of a failed node process is initiated by transmitting a request to a process execution service operating on the failed network node.

Claim 18 (original): The method of claim 11, further comprising transmitting a node status message to a network management module operating at a network management network node.

Claim 19 (previously presented): The method of claim 11, further comprising launching into the network a plurality of recovery modules, each configured to migrate from

one network node to another, determine the status of a network node, and initiate a recovery process on a failed network node having one or more failed node processes.

Claim 20 (previously presented): A computer program for managing a plurality of distributed nodes of a network, the computer program residing on a computer-readable medium and comprising computer-readable instructions for causing a computer to perform operations comprising:

migrating the computer program from one network node to a series of successive network nodes;

determining a status of a current one of the network nodes to which the computer program has migrated;

in response to a determination that the current network has one or more failed node processes, initiating a recovery process on the current network node; and

after initiating the recovery process on the current network node, migrating from the current network node to a successive one of the network nodes.

Claim 21 (previously presented): The system of claim 1, wherein each of the recovery modules is a software object that is instantiatable by a respective operating environment on each network node.

Claim 22 (previously presented): The system of claim 21, wherein the operating environment on each of the network nodes provides each of the recovery modules with access to status monitoring resources, recovery resources, and native operative system resources that are available at each of the network nodes.

Claim 23 (previously presented): The system of claim 1, wherein, upon migrating from a first one of the network nodes to a second one of the network nodes and being instantiated on the second node, each of the recovery modules determines a status of the second network node.

Claim 24 (previously presented): The system of claim 23, wherein each of the recovery modules initiates the recovery process on the second node in response to a determination that the second node has one or more failed node processes.

Claim 25 (previously presented): The system of claim 23, wherein each of the recovery modules is configured to migrate to a third one of the network nodes after determining the status of the second network node.

Claim 26 (canceled)

Claim 27 (previously presented): The system of claim 1, wherein the network management module determines a number of the recovery modules needed to achieve a specified network monitoring service level, and launches the determined number of recovery modules into the network to achieve the specified network monitoring service level.

Claim 28 (previously presented): The system of claim 1, wherein the network management module statistically identifies target ones of the network nodes to achieve a specified confidence level of network monitoring reliability, and launches the recovery modules into the network by transmitting respective ones of the recovery modules to the identified target network nodes.

Claim 29 (previously presented): The method of claim 11, further comprising:
determining a number of the recovery modules needed to achieve a specified network monitoring service level;
statistically identifying target ones of the network nodes to achieve a specified confidence level of network monitoring reliability; and
transmitting the determined number of the recovery modules to the identified target network nodes.

Claim 30 (previously presented): The system of claim 1, wherein the network management module monitors number of network node failures reported by the recovery

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Page : 7 of 27

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modules and launches more migratory recovery modules into the network as the number of reported failures increases.